Comparison Between the Results of PCR and Oxacillin Agar Dilution in Detection of Methicillin Resistant Staphylococcus Aureus Strains Isolated from Alzahra Hospital, Isfahan, Iran

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Background & Objectives: *Staphylococcus aureus* is one of the most important bacteria in Medicine which it's pathogenesis in the community and the hospitals are widely considered. Methicillin Resistant *Staphylococcus aureus* strains are among the most important pathogenesis with high mortality prevalence so it is necessary for early detection and control to treat nosocomial infections.

Methods: 114 S. aureus strains were isolated from different clinical samples in Alzahra Hospital. Minimum inhibitory concentration of Oxacillin was determined by agar dilution for methicillin resistant strains and PCR was done for mecA genes.

Results: 35 samples had mecA gene which was approved by agar dilution (MIC=8 µg/ml). MecA gene PCR was done for all strains and the results were compared with agar dilution.4% of resistant strains had mecA that were unexpressed in phenotypic methods and had Methicilline resistance.

Conclusion: This study revealed that agar dilution methods has more sensitivity and specificity in detection of antibiotics sensitivity than diffusion disk but PCR is the best methods to identify the Methicillin resistant and sensitive strains. Because of some strainswere Oxacillin sensitive in phenotypic tests, despite of having mecA gene, they were identified by PCR.

Keywords: *Staphylococcus aureus*; MecA Gene; Methicillin Resistance